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Handling Asthmatic Students in the Dissection Hall

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Asthma, one of the leading chronic diseases, has a high prevalence among young adults or adolescents. Students with the asthmatic attack have been reported to miss several days in school which often leads to an increasing rate of absenteeism in school, hospital visitation, morbidity, and mortality. Asthma attacks have also been revealed to have some psychological effect on those having them. There are many things that do trigger asthma attacks and one of them is formaldehyde that is the chief embalming chemical used in many medical schools. One major problem is how to handle a situation when the choice of one's career is being surrounded by triggers that can lead to an asthma attack. This paper discusses some of the measures to be taken to avoid any form of an asthma attack in the course of study, especially in the human anatomy dissecting hall.

Keywords: Asthma, dissection hall, medical students, formaldehyde

Introduction

The As a fact based on records, asthma is among the leading allergic or chronic diseases in young adults (1, 2). In fact, allergic diseases are the sixth in the group of childhood diseases as stated by the World Health Organization (WHO) (3). In the United States (US), Asthma is a recurrent chronic disease in adolescents (2) and around 14% of children under 18 were diagnosed with asthma. About 9% which is approximately 6.8 million individuals were asthmatic as at 2006 (1).

The prevalence of asthma was in the eighth position amidst chronic disease conditions in the US (2). Approximately 17.7 million Americans experience asthma, out of which over 5.6 million are below 18 years (2). The prevalence of asthma seems to be global as bronchial asthma is on the high side among adolescent high school students in Israel (4). Asthma is also on a higher frequency in African Americans compared with the whites. This was about 22.7% higher in African Americans than in

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whites as at 2001 (2). Out of major allergic diseases, asthma is a major cause for seeking primary care (3), a main cause of childhood hospitalization and a leading factor of students' absenteeism in schools (1, 2).

Asthma in Academic Environments

In the academic environment, allergic diseases and other health-related deficiencies, have been reported to have a consequential impact on students' daily activities, especially at schools. This often led to school absenteeism, reduced engagement in school activities like sports, loss of concentration, poor academic performance including stigmatization and social isolation are among the outcomes (3). It was reported that asthmatic attacks among students cause above 13 million loss of school days per year (3). According to a research, children who had at least 1 asthma crisis in the preceding academic calendar missed about 12.8 million school days because of asthma (1). Frequent absenteeism could also compromise the development and acquisition of new knowledge and skills.

The burden of asthma seems not to be evenly distributed among population, as children of cheap socioeconomic condition living in cities often have higher morbidity (3). Inaccessibility to healthcare could also make them to be undiagnosed. Asthmarelated hospitalizations, morbidity and mortality have been on the increase, especially in Afroamerican asthmatic adolescent (2).

Although, the causes of this high frequencies have not been established, but environmental factors, poor or lack of self-management of asthma, sparse knowledge of asthma, and mediocre social support could be contributing factors (2).

Asthma in Adolescent Students

According to Sin et al (2), many asthmatic adolescents usually have poor management behaviors. They were often reluctant in seeking assistance at the first sign of a breathing problem, simply because they wanted to be self-sufficient. According to a research, only few of the adolescent involved in the survey swing to action by stopping playing and take caution when they started having difficulty in breathing. Therefore, asthmatic adolescent need sufficient knowledge on managing asthma, how to communicate with healthcare providers for appropriate management or preventing an asthma attack or crisis, and self-competence on disease self-management (2).

Asthma in Medical Schools

Based on our experience in the academic environment and dissecting hall, at least one out of 50 medical students are asthmatic. Nonetheless, being asthmatic should not stop one from pursing a dream career. The big challenge however could be when such career is embedded with trigger, allergy, or irritant. Either asthmatic or not, students usually find dissection hall inconducive, especially when it is saturated with the pungent or irritating smell of formaldehyde (5).

Asthma as an allergic and chronic disease can be triggered by many factors such as allergens, irritants, hormonal or neurogenic factors and stress (6). Inflammatory reaction and variable bronchospasm are its pathogenic characteristic symptoms while shortness of breath; cough with or without expectoration, wheezing and tightness of the chest are clinical characteristics (6). These symptoms can impede the students' day to day activity, reduce productivity, and quality of life.

Formaldehyde (HCHO) which is a colorless, flammable, and highly soluble gas in water is often used as the chief embalming chemical (About 37% of the chemical in aqueous solution is called formalin) (5). One major characteristics of formaldehyde is the pungent smell or odor. The pernicious effects of exposure to formaldehyde are usually irritation of the upper respiratory tract mucosa, contact dermatitis and irritation of the eyes (5). Although, there is a wide variation as to extent of individuals reaction to the manifestation of irritation. However, accommodation of odor threshold and irritation of the conjunctivae is common. This kind of environment is what medical students have to face almost every week.

Instantaneous and unexpected attacks of difficulty in breathing, is one of the main characteristics of asthma which makes asthma attacks to be a persistent threat for asthmatics (7). Besides, the anticipated threat is often accompanied by anxiety. Increased muscle tension, accelerated breathing, sweating and chest tightness are the physiology correlates of anxiety. Cognitive correlates of anxiety are thought storms, difficulty in concentration, and disordered thinking (7). Moreover, anxiety and depression have also been linked with asthmatic pathology (8). According to Centanni et al (8), some studies have reported an increase in the prevalence of well-structured psychiatric disorders in asthmatic patients, while others have pinpointed psychological behavior characterized by anxious and depressive traits. Paying attention to and caring for the asthmatic medical students in the dissection hall will go a long way, peradventure such student rammed into crisis during a dissection session. This will help to prevent and relief these symptoms, including achieving a normal day to day activity and smooth dissecting experience (6).

Conclusion and Recommendations

The welfare and care of students especially medical students should be paramount as they begin their career path. Besides, being asthmatic should never be a barrier in achieving quality medical training. Even though most student in the early medical school are at the adolescent age and would prefer to be independent, however, they should not be left alone. As much as they will like to be independent and might not want to disclose any underlining ailment, school management, especially laboratory staff, should be extremely sensitive and proactive when it comes to the health of the students under their tutelage. Abiding to the measures or recommendations below will go a long way in caring for the asthmatics and ensuring quality day-day life among the medical student. This will also help to eliminate any form of mental distractions, isolation, and stigmatization.

The following are some of the recommended measures to be taken to avoid asthmatic crisis or attack in the dissection hall:

1. Identification of the asthmatics: This will help in monitoring and record keeping. A form bearing name and a passport photograph might be the best means of identification.
2. Ensure asthmatics are always with their inhaler before entering the dissection hall. In fact, an undertaken should be written to make compliance more official and strictly adhere to. That notwithstanding, ensure there is inhaler in the first aid box.
3. Always check whether asthmatics are active in their group or not. Unless, such student might have left the dissection hall without being noticed.

4. Give room for asthmatics to take fresh air at intervals outside the dissection hall.
5. Ensure there is proper ventilation in the dissection hall.
6. Reducing the pungent smell or concentration of formaldehyde will go a long way by reducing the chances of getting irritated and being attacked with asthma.
7. Laboratory staff should also be trained or have knowledge of asthma and its crisis management.
8. Avoid anything that can trigger or irritate asthmatics in the laboratory.
9. Schools should intervene by screening and providing affordable healthcare in school clinics. Screening will help to identify undiagnosed and undertreated students.
10. If possible, seek for alternative embalming chemicals to reduce the concentration of formaldehyde to the barest minimum. However, one must be aware of the hazards of any other choice chemical to be use.
11. Asthmatic students with persistent symptoms should be rigorously evaluated to identify other factors and then adopt a more comprehensive approach or healthcare.

Conflicts of Interest

The authors declared no conflict of interest for the present article.

References

1. Bruzzese JM, Evans D, Kattan M. School-based asthma programs. Journal of Allergy and Clinical Immunology. 2009;124(2):195-200

2. Sin MK, Kang DH, Weaver M. Relationships of asthma knowledge, self-management, and social support in African American adolescents with asthma. International journal of nursing studies. 2005;42(3):307-13

3. Urrutia-Pereira M, Mocellin LP, de Oliveira RB, Simon L, Lessa L, Solé D. Knowledge on asthma, food allergies, and anaphylaxis: Assessment of elementary school teachers, parents/caregivers of asthmatic children, and university students in Uruguaiana, in the state of Rio Grande do Sul, Brazil. Allergologia et immunopathologia. 2018;46(5):421-30

4. Brook U, Kishon Y. Knowledge and attitude of healthy high school students toward bronchial asthma and asthmatic pupils. Chest. 1993;103(2):455-7

5. Pabst R. Exposure to formaldehyde in anatomy: An occupational health hazard?. The Anatomical Record. 1987;219(2):109-12

6. Al-Hajjaj MS. Difficult-to-treat asthma, is it really difficult?. Annals of thoracic medicine. 2011;6(1):1

7. Ten Thoren C, Petermann F. Reviewing asthma and anxiety. Respiratory medicine. 2000;94(5):409-15

8. Centanni S, Di Marco F, Castagna F, Boveri B, Casanova F, Piazzini A. Psychological issues in the treatment of asthmatic patients.Respiratory medicine2000;94(8):742-9

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